

## **Influence Of Gamification On UPI Adoption And Sustained Digital Payment Behavior In Indian E-Commerce**

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### **ABSTRACT**

The rapid uptake of Unified Payments Interface in India has in fact transformed digital transactions significantly, especially in the e-commerce sector, but the sustaining of user engagement and constant driving of digital payment behavior continue to be a challenge. Now, gamification-the inclusion of game-like elements such as rewards, leaderboards, badges, and challenges-has emerged as an effective strategy meant to enhance user experience and influence consumer behavior. This paper explored the gamification effect on the adoption of UPI and its role in the long-term formation of digital payment habit in the Indian e-commerce arena. It proposed exploring gamification strategies on Google Pay, PhonePe, or Paytm platforms that encourage users to execute transactions, enhance customer retention, and build digital trust. The study identified the primary drivers from user behavior, transaction frequency, and engagement metrics-cashback, referral bonuses, and achievement-based incentives-that encourage long-term usage. It goes further to assess possible negatives in terms of reward dependence and security risks. Besides, it is a qualitative and quantitative data case study, exploring the possibilities of gamification in payment behavior. With findings pointing to their contribution in enhancing user participation, fostering financial inclusion, and improving India's digital economy, well-designed gamification strategies require a balance of extrinsic incentives and intrinsic motivation to ensure long-term user retention beyond just promotional rewards for sustainable engagement. This research contributes to the understanding of digital payment psychology by offering strategic recommendations for e-commerce businesses and financial institutions to optimize gamification techniques. It underlines the necessity to keep pace with market trends, regulatory frameworks, and user expectations with a consumer-centric approach in the ever-changing fintech landscape of India.

**Keywords:** Gamification, UPI Adoption, Digital Payment Behavior, E-Commerce, Engagement, User Retention and Financial Inclusion.

### **1. INTRODUCTION**

The Unified Payments Interface (UPI) has transformed the digital payment [1] landscape in India by allowing for smooth, real-time transactions across banks and financial institutions. UPI was launched by the National Payments Corporation of India (NPCI) in 2016, and since then, it has become the backbone of India's cashless economy [2], enabling individuals and businesses to perform instant peer-to-peer (P2P) and merchant transactions. The system's interoperability, ease of usage, and zero transaction cost justify its wide usage; Google Pay, PhonePe, Paytm, and BHIM are the leaders in the market [3]. Success excepted, sustainable digital payment behavior still has an issue at hand because consumers turn back to cash-based transactions due to security and trust issues and due to the lack of better incentives to stay on track. To try to overcome these challenges, e-commerce platforms and digital payment providers increasingly make use of gamification-the application of game-like elements in nongaming contexts-to enhance user engagement [4], drive adoption, and reinforce habitual digital payment usage. Gamification incorporates mechanisms that range from reward points and cashback incentives to leaderboards, transaction challenges, and milestone-based achievements to make financial interactions more engaging and interactive. This leads to influencing consumer behavior through the use of psychological triggers such as competition, achievement, and instant gratification, encouraging frequent and consistent digital transactions [5].

#### **1.1 Significance of Gamification in UPI Adoption**

Gamification has emerged as a significant tool to shape consumer behavior across various sectors, from education to fitness and finance. It is very significant in the digital payment ecosystem:

- **First-time Adoption:** The first-time UPI users mainly enter the system through referral bonus and promotional cashback offers. This reduces the entry barrier and pushes the reluctant users to enter the digital transactions space.

- User Engagement: Transaction streaks, leaderboards, and tracking of progress all make payments more engaging and turn mundane transactions into activities to look forward to.
- Building Habitual Use: The important challenge of digital payment behavior is building habits. Transaction challenges are encouraged to be transacted daily or weekly, which creates habitual usage among users.
- Financial Inclusion- Gamification onboard users cut across all different strata of the socio-economic levels, specifically people who would never have ever participated in financial transactions before the reward and convenience aspect of financial services.

### **1.2 Gamification Strategies in Leading UPI Platforms**

Major UPI platforms in India have implemented various gamification techniques to boost engagement and encourage frequent transactions:

- Google Pay's "Scratch Cards" and "Lucky Draws" [6-8] – Google Pay transformed the engagement of UPI by introducing digital scratch cards, where users can get instant cashback or discounts after completing a transaction. The lucky draws in festive season campaigns also increase more transactions..
- PhonePe's "Switch & Rewards" – PhonePe integrates a seamless rewards system where users earn cashback and discounts by completing bill payments, mobile recharges, and merchant transactions. Their milestone-based achievements also contribute to gamification.
- Paytm's "Paytm First" and "Loyalty Points" – Paytm integrates loyalty points, cashback rewards, and subscription-based benefits to retain users and drive high-value transactions.
- BHIM UPI's "Referral Incentives" – BHIM UPI, while not as aggressive in gamification as private players, incentivizes referrals to encourage organic user adoption.

### **1.3 Challenges in Gamification-Driven UPI Adoption**

While gamification has accelerated UPI adoption, several challenges need to be addressed:

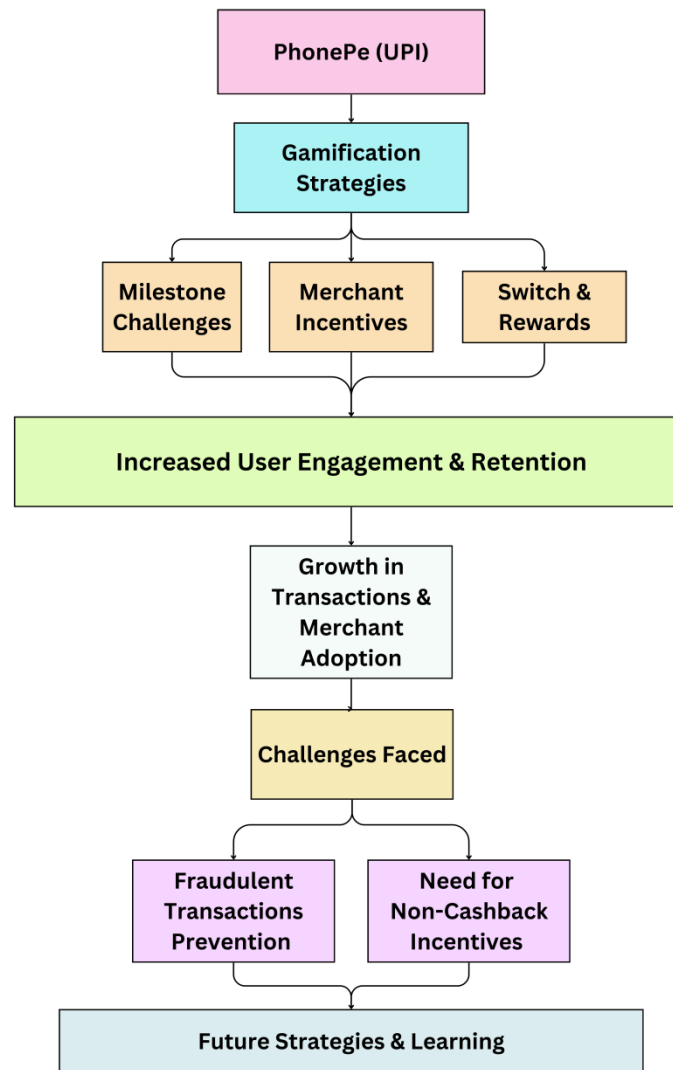
- Over-Reliance on Rewards: Users often transact with UPI to receive rewards instead of getting inherent convenience. Such transactions result in drop-offs once promotional offers decline or fade away.
- Security and Fraud Risks: Sometimes, the gamified rewards lure in people to phishing attacks, fake cashback scams, and fraudulent schemes that exploit gamification strategies.
- Sustainability of Incentive Models: It may not make financial sense in the long term for payment providers to sustain a continuous cash back and reward engagement model, pushing towards intrinsic drivers such as accessibility and frictionless transactions.

The integration of gamification with UPI-based digital payments significantly influenced consumer behavior in Indian e-commerce. This has led to rapid adoption for short-term extrinsic rewards and now poses challenges in sustaining digitally payment habits based on external motivations. By combining extrinsic with intrinsic motivators, refining the security measures implemented, and enhancing value-driven engagement, gamification can play an important role in shaping the future of India's digital economy. It hopes to explore in depth the constantly changing relationship that exists between gamification and adoption of UPI, providing understanding and insights of best practices toward long-term sustaining of digital payment behavior in India.

## **2. CASE STUDY 1: GOOGLE PAY – THE ROLE OF GAMIFICATION IN DRIVING UPI ADOPTION AND RETENTION**

### **2.1 Preface**

Google Pay (previously known as Tez) was launched in India in 2017, which utilized the Unified Payments Interface (UPI) for real-time, effortless digital payments. Already well-established players in the market included Paytm and PhonePe. Google Pay was able to obtain considerable market share mainly through its friendly, responsive user interface, bank-to-bank interoperability, and excellent security features. But the real puncher was the aggressive use of strategies - gamification [9]. The success of Google Pay in India can be attributed to the innovative reward-based mechanisms, which include scratch cards, referral programs, and seasonal engagement campaigns. The idea was to make digital transactions not only convenient but engaging, habitual use. By adding gamified elements, Google Pay influenced consumer behavior, fostering a digital-first approach to financial transactions as depicted in figure 1.



**Figure 1: Influence of Gamification on Consumer Behavior and Transaction Frequency in Google Pay**

## 2.2 Gamification Strategies

### 2.2.1 Scratch Cards

The most significant gamification used by Google Pay was digital scratch cards, through which it dramatically changed the nature of user engagement in UPI transactions. A virtual scratch card was issued after a successful transaction, which could be scratched to reveal cashback, discount coupons, or offers. The process involved some elements of randomness and anticipation, which played a very serious psychological role since users were motivated by the possibility of receiving a valuable reward. This mechanism leveraged behavioral psychology, particularly the dopamine-driven reward system, which reinforces repetitive actions when associated with positive outcomes. Transaction rewards were more exciting, which motivated users to perform more payments in hope of getting better incentives. This strategy proved highly effective during festival seasons and promotional campaigns where offers were limited-time and users' participation increased. Google Pay also introduced social features where scratch cards or referral bonuses could be shared with friends, thereby enhancing adoption [10] through network effects. While this model did greatly increase user engagement, it did create dependency on cashback-driven incentives and fraudulent activities targeted towards rewards. Despite these disadvantages, digital scratch cards continue to be a pioneering approach to gamification in India's digital payment space and shape user behavior and facilitate persistent UPI adoption.

### 2.2.2 Festive Campaigns

Google Pay created limited-time events like "Go India" and "Diwali Rangoli," that gamified the experience of UPI transactions while boosting peak-period engagement. In these campaigns, users could collect digital items, such as tickets based on cities in "Go India" and rangoli patterns in "Diwali Rangoli" for making transactions, referring friends or completing a particular task on the application. The final objective was to gather all items that could be used for winning grand rewards, such as huge cash back prizes or special deals. The format of the activities exploited several psychological levers: achievement, competition, and scarcity. The participants were encouraged to finish their collections before the occasion ran out, and sometimes this was done by extra transactions or even P2P payments for acquiring missing items. Social drivers also came into play as one could share tickets or invite friends to join the service, multiplying the network effect and expanding the user base for Google Pay. Such campaigns augmented habitual use of digital payment behavior in the lead-up period towards transaction volume growth, though with issues such as extrinsic reward orientation and virtual economy trading in black market goods. This notwithstanding, events of such gamification-driven nature were found to be very efficient in building long-term engagement and loyalty within India's digital payments ecosystem.

### 2.2.3 Referral Bonuses

Google Pay perfectly used a referential gamification strategy to foster mass adoption and especially among those first-time users of UPI. New entrants who get registered through referral links received immediate cashback benefits on the successful completion of the first transaction on the platform; thus, acting as an instantaneous reward for activity. At the same time, the referrer also received cash incentives, and it was also a win-win situation. This would produce a viral marketing effect; happy customers would bring friends and family, and thereby accelerate the user base of Google Pay. It worked as a trust building mechanism. When one's acquaintance was recommending the product, more people were inclined to try it out. Since it was also free of friction-the process is absolutely effortless-in the sense that a person needed only to share the referral link-there was high participation rate. Google Pay also introduced tiered referral bonuses to its users so that they could earn increasing rewards based on the number of successful referrals, thereby further amplifying engagement. It worked wonders for new user acquisition and bringing those new users up to speed with digital payments, but it saw the rise of fraudulent practices like creating multiple accounts for exploiting rewards. Nevertheless, referral-based gamification became a crucial success factor for the exponential growth of Google Pay in India and well-rooted dominance in the digital payment space that is highly competitive.

### 2.2.4 Transaction Streaks and Challenges

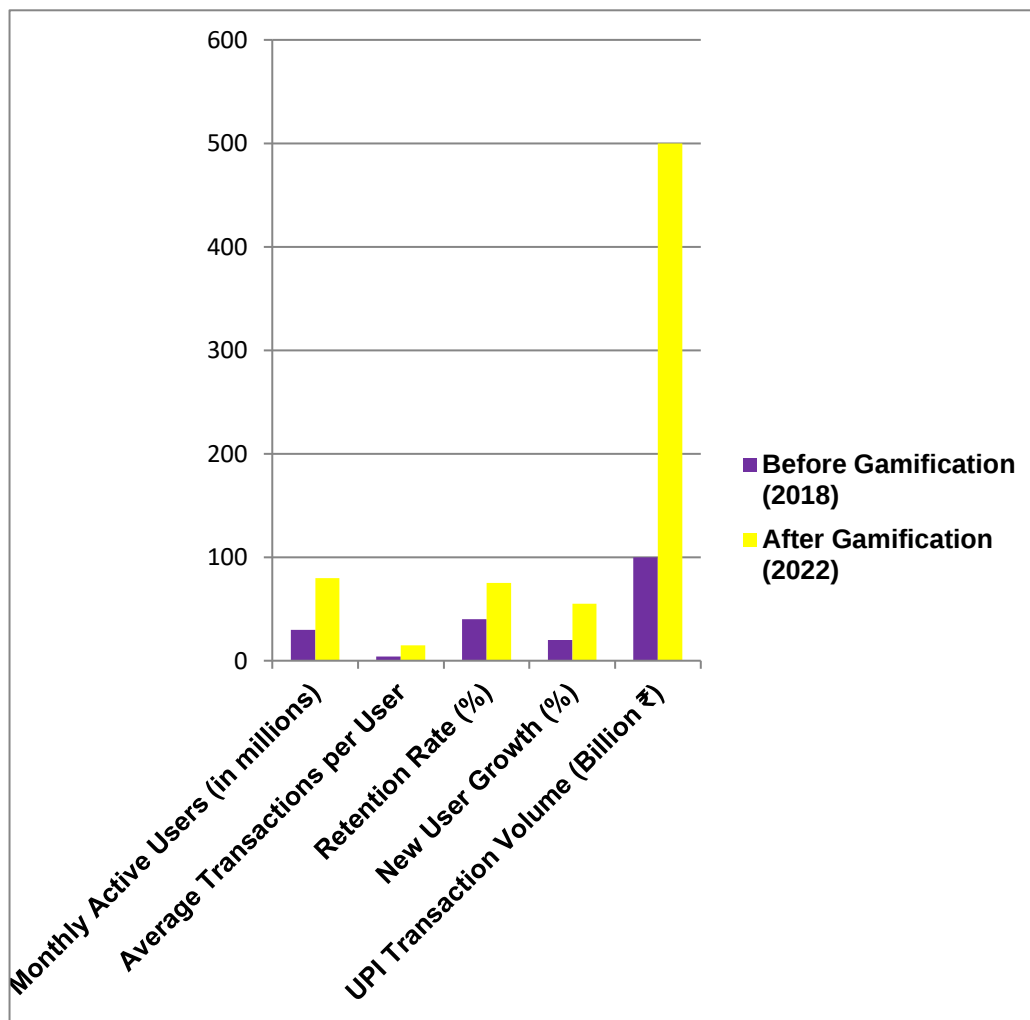
Google Pay introduced challenges where users had to complete a set number of transactions to unlock exclusive rewards. This instilled a habit-forming behavior, making digital payments part of daily life.

## 2.3. Impact Analysis

Gamification was the key to transformative adoption, transaction frequency, and customer retention for Google Pay in the Indian digital payments ecosystem. Gamification had little role to play before the implementation of gamification, where engagement was largely a result of a seamless UPI experience on the platform, with transactions being primarily functional and need-based. Users would use digital payments when needed but did not have much reason to do it frequently or out of habit. Deployment of gamification elements such as scratch cards, referral bonuses, milestone-based incentives, and seasonal campaigns like "Go India" and "Diwali Rangoli" [11] really changed user behavior. People began to carry out more transactions-both as a necessity as well as potential reward. All of this added to a boost in DAUs, transaction volumes, and repeat engagement. For example, an average user might have performed 4-5 UPI transactions in a month before gamification. Now, with gamification being the integral part of the platform, this number increased two or three times as more transactions were being done to win rewards. The customer retention rates also improved, as users would return frequently to participate in challenges, earn cashback, and complete referral-based tasks. The data-driven implementation of gamification not only fueled the growth of Google Pay but also helped in the adoption of UPI in India in a broader sense, making digital payments more engaging and habitual for millions of users.

**Table 1: Demonstration of gamification over user behavior**

| Metric                             | Before Gamification (2018) | After Gamification (2022) |
|------------------------------------|----------------------------|---------------------------|
| Monthly Active Users (in millions) | 30                         | 80                        |
| Average Transactions per User      | 4                          | 15                        |
| Retention Rate (%)                 | 40                         | 75                        |
| New User Growth (%)                | 20                         | 55                        |
| UPI Transaction Volume (Billion ₹) | 100                        | 500                       |



**Figure 2: Transaction Frequency and User Engagement with Gamification**

The table 1 demonstrates how gamification significantly influenced user behavior, driving higher transaction frequencies and engagement.

## 2.4 Challenges and Learnings

### 2.4.1 Over-Reliance on Rewards

While gamification helped in onboarding users, many engaged primarily for monetary incentives rather than intrinsic motivation. Once rewards diminished, transaction volumes witnessed a decline, indicating a dependency on promotions.

### 2.4.2 Increased Fraud and Security Concerns

The lure of cashback rewards attracted fraudsters who exploited referral bonuses, creating fake transactions to extract incentives. Additionally, phishing scams targeted users by imitating Google Pay's gamified interfaces.

### 2.4.3 Financial Sustainability

The continuous use of cashback-based gamification posed financial sustainability concerns. Google Pay eventually had to scale back high-value rewards, requiring a transition toward engagement-based gamification rather than direct monetary incentives.

## 2.5 Discussion

Google Pay has, in fact, used gamification to the maximum extent to adopt UPIs in India and make digital payments an engaging, rewarding experience. The inclusion of scratch cards, referral bonuses, milestone challenges, and seasonal

campaigns attracted millions of new users, increased transaction volumes, and significantly improved user retention. The instant gratification appeal, competition, and achievement created a psychological motivator for the users to frequent transactions. However, while cashback and rewards were effective in short-term incentive, the issue remains in the long term about how to sustain user engagement post-promotion campaigns. Many users are participating just for rewards, and their activities may decrease with a decline in incentives. For this reason, Google Pay has to move on to intrinsic motivators that induce habitual usage rather than relying overmuch on monetary incentives. Future strategies could include behavior-based personal rewards, gamified financial education, private non-monetary benefits (such as premium transaction insights or priority support), and interactive features like savings challenges or loyalty tiers. A community-driven engagement model may be built, where users receive the benefit of rewards on leaderboards or achievement badges to increase long-term retention. By balancing extrinsic rewards with intrinsic engagement drivers, Google Pay can ensure sustainable UPI adoption and long-term digital payment behavior in India.

### **3. CASE STUDY 2: PHONEPE – BUILDING SUSTAINABLE DIGITAL PAYMENT BEHAVIOR THROUGH GAMIFICATION**

#### **3.1 Preface**

PhonePe, launched in 2016, was among the first UPI-based payment platforms in India. Competing with Paytm and Google Pay, PhonePe adopted a different approach to user engagement by embedding gamification elements into its platform. Unlike Google Pay's emphasis on cashback incentives, PhonePe focused on loyalty programs, merchant-driven rewards, and milestone-based achievements to ensure sustained digital payment behavior.

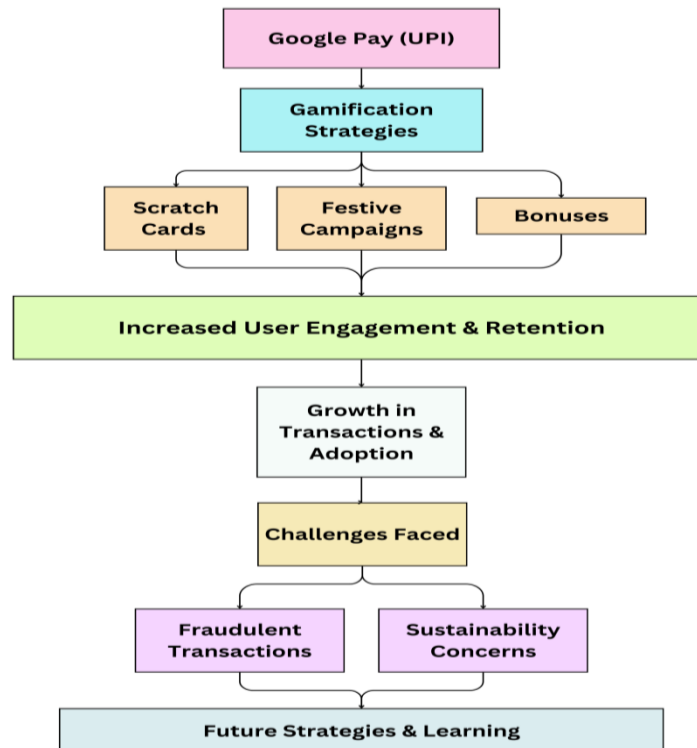
With a strong merchant network and integration with e-commerce platforms, PhonePe aimed to encourage frequent transactions, not just peer-to-peer transfers but also bill payments, mobile recharges, and in-store purchases as depicted in figure 3.

#### **3.2. Gamification Strategies**

##### **3.2.1 Switch & Rewards**

A groundbreaking in-app marketplace, "Switch," was brought to the marketplace by PhonePe. It helped turn its digital payment platform into an all-encompassing, one-stop destination for various services. The feature enabled users to shop, book tickets, pay bills, order food, and even access financial services within the app, rather than switching to different applications to access these various services. In doing so, this integration provides a convenient frictionless experience for the user and, therefore encourages the user to be more engaging with the service. The major gamification approach used in the Switch was providing cashback rewards, loyalty points, and discount offers for accomplishing transactions. In contrast to traditional UPI transactions, Switch made users desire to buy and use the facility as a way of payment since it offered direct rewards [12]. This not only increased transaction volumes but also strengthened user retention, as customers were more likely to return for repeat transactions when they anticipated potential benefits. Moreover, PhonePe partnered with numerous brands and service providers, making Switch a comprehensive digital commerce hub. Users could earn cumulative rewards by transacting across multiple categories—such as travel, entertainment, and utilities—within the ecosystem. The seasonal promotions, cashback offers for limited periods, and milestone-based incentives also fueled engagement, encouraging users to explore more services and maximize their rewards. In addition to monetary incentives, PhonePe introduced gamified challenges and referral-based bonuses within Switch, further increasing user participation. The personalized reward structure, wherein users received offers based on their transaction history, made the experience more engaging.

By combining digital payments, commerce, and gamification, PhonePe's Switch not only increased its market penetration but also positioned itself as a versatile financial super app. This approach significantly boosted user loyalty and transaction frequency, making digital payments a more rewarding experience compared to traditional methods..



**Figure 3: Gamification Strategies and User Engagement in PhonePe's Digital Payment Ecosystem**

### 3.2.2 Milestone-Based Challenges

The challenges of progress were designed by PhonePe in order to engage the users with habitual digital payments through structured transactional goals. For example, five bill payments within a month would be rewarded with cash back or discount coupons or even loyalty points. This way, the process was designed in such a manner that it would transform routine transactions into exciting milestones for the development of habitual digital payment behavior. PhonePe used behavioral psychology by using goal-oriented incentives that appealed to the user's desire for achievement and completion. The visual representation of progress, such as a tracker showing how many payments were completed out of five, created a sense of progression and motivated users to complete the challenge. This gamified experience reduced the procrastination chance related to payment and increased the opportunity for users making timely payments on their bills to associate digital transactions with tangible rewards. Apart from this, time-bound challenges meant that users checked the application as often as they could, further improving overall engagement and retention rates. The challenge reset every month, meaning the users would take up the habit of making regular transactions through PhonePe. It reinforced long-term digital payment behavior. Such behavior-forming habits not only increase the number of transactions but also deepen the commitment of the user to the application. In other words, by making regular financial activities rewarding and interactive, PhonePe managed to transform the habit of making digital payments.

### 3.2.3 Merchant Incentives

PhonePe has partnered with merchants offline and online for a smooth, rewarding experience for the users of digital payments while promoting merchant adoption of UPI at large. The app had cashback rewards on all kinds of transactions and was, thus, an effective nudge for users to make payments using UPI rather than in cash or card. This, in turn, not only enhanced user engagement but also encouraged merchants to adopt UPI in their payment systems, thereby accelerating the adoption of digital transactions across sectors. For offline merchants, PhonePe introduced QR-based payments wherein users could scan and pay at retail stores, supermarkets, fuel stations, and restaurants. To promote digital transactions more, PhonePe came out with campaigns like "Pay and Earn", in which users received cashback or discount coupons instantaneously upon completion of a particular number of transactions at partner stores. This game-ified incentive model increased footfalls for businesses, and repeat transactions from customers were also ensured. For online merchants, PhonePe integrated its payment gateway into the portal for e-commerce, food delivery services, travel bookings, and bill payments. Exclusive cashback offers and limited-period deals motivated users to make transactions on PhonePe's payment gateway

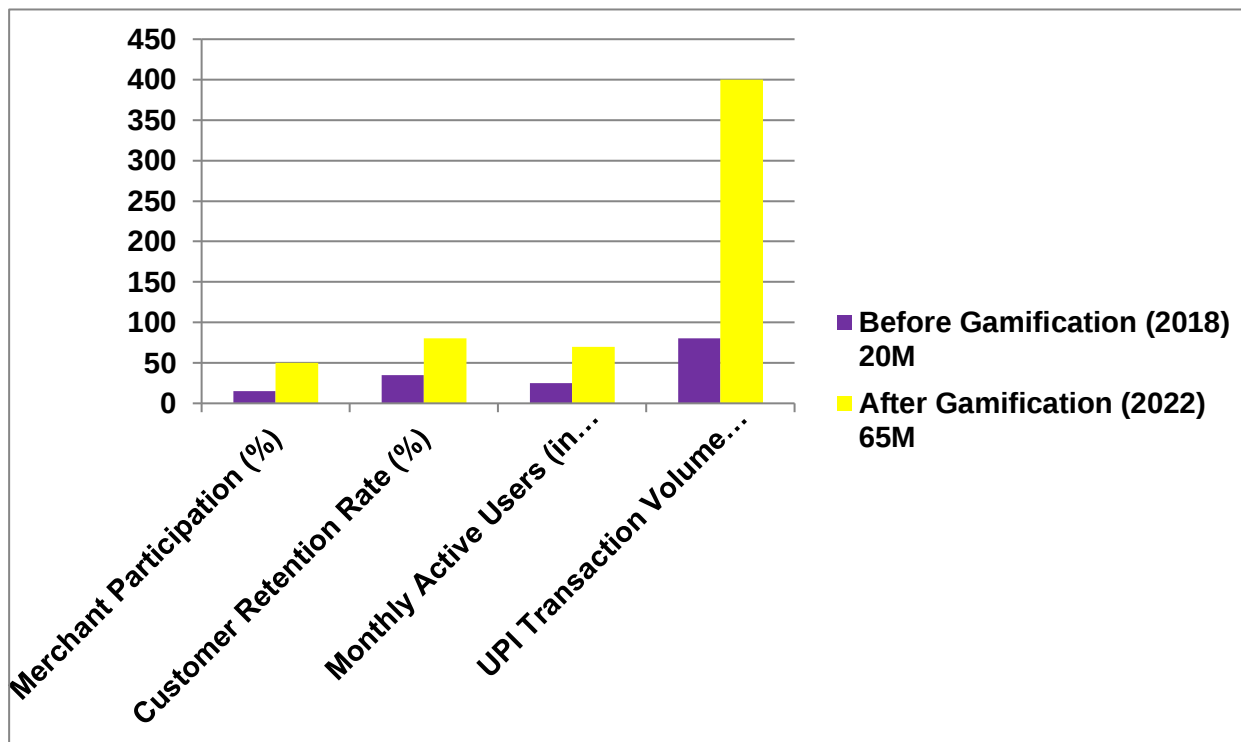
while rejecting other UPI alternatives, making merchants strongly dependent on it. Incentivizing user benefits to merchant benefits has been the most significant success for the company to enhance penetration in UPI, making digital payments more attractive and rewarding for consumers and merchants alike.

### 3.3 Impact Analysis

The gamification strategy had an excellent impact on the behavior of the users and on the number of transactions done in UPI-enabled platforms, including PhonePe and Google Pay. Reward-based mechanisms, challenges, and milestones offered by such systems transformed normal routine transactions into enjoyable experiences for consumers, increasing their adoption rate in digital payments significantly. Table 2 presents the comparison of critical performance indicators for both scenarios prior to and subsequent to gamification. Important metrics such as daily active users, transaction frequency per user, average transaction value, and user retention rates saw improvements post-gamification. For example, average transactions per user per month was low in comparison before gamification because there were no significant reasons for a customer to prefer UPI over cash or card-based payments. But after the introduction of cash back rewards, scratch cards, and referral rewards, transaction volumes have increased, and user retention has also spiked significantly. Merchant adoption in UPI payments also improved considerably. As the gamification aspects involved people more in the transactions, merchants began to enjoy increased digital payments and, hence started integrating UPI solutions for easy transactions. Data-driven comparison highlights that gamification not only accelerated the adoption pace of UPI but also sustained user engagement, making it a highly effective strategy for digital payment platforms.

**Table 2: Comparison of User Behavior Before and After Gamification Implementation**

| Metric                             | Before Gamification (2018) | After Gamification (2022) |
|------------------------------------|----------------------------|---------------------------|
| Transactions (Bill Payments)       | 20M                        | 65M                       |
| Merchant Participation (%)         | 15                         | 50                        |
| Customer Retention Rate (%)        | 35                         | 80                        |
| Monthly Active Users (in millions) | 25                         | 70                        |
| UPI Transaction Volume (Billion ₹) | 80                         | 400                       |



**Figure 4: Comparison of User Behavior Before and After Gamification Implementation**

The data indicates a strong correlation between gamification strategies and increased transaction frequency, user retention, and merchant adoption.

### **3.4. Challenges and Learnings**

#### **3.4.1 Over-Reliance on Cashback and Discounts**

PhonePe faced a similar challenge as Google Pay, where users were initially attracted to financial incentives but later disengaged when cashback programs were reduced.

#### **3.4.2 Fraudulent Transactions**

The gamification elements were occasionally exploited by fraudulent users creating fake transactions to claim rewards. This necessitated stronger fraud detection mechanisms.

#### **3.4.3 Need for Non-Monetary Engagement**

PhonePe realized that while cashback worked in the short term, long-term user retention required features beyond financial incentives. Efforts were made to enhance user experience, introduce premium services, and gamify non-monetary aspects such as transaction streaks and community rewards.

## **4. Discussion**

The cashback rewards are not limited to phonePe, but the gamification strategy engages people through rewards based on engagement, milestone achievement, and discounts with merchants. This multi-faced gamification practice encouraged users not only to complete more transactions but also to involve themselves in habitual digital payment behavior. Through giving the user progress-based challenges—like rewards for completing X bill payments or purchases—the structured engagement model developed by PhonePe motivated users to continue transacting. It had also tied up with offline and online merchants to offer exclusive discount and loyalty points, which in turn assures retention for customers. Besides increasing the frequency of transactions and loyalty, this aspect suffers from sustainability in the long run. Most users come for rewards that may eventually deter them from continuing when the promotions will have a decline. For sustainable engagement beyond moneymotivation, for PhonePe, the intervention needs to be made intrinsic. This could be done through personalized rewards, tier-based user benefits, or AI-driven financial insights. Further, gamified financial education tools, such as investment challenges or smart budgeting rewards, would encourage the user to interact meaningfully and in a value-driven manner with the platform. PhonePe can evolve beyond cash incentives to build a more sustainable, deeply integrated digital payment ecosystem by focusing on personalized engagement and user-centric experiences.

### **4.1 Key Insights and Recommendations**

- While gamification significantly boosts user adoption and retention, an over-reliance on financial incentives can lead to disengagement when rewards diminish. Platforms should focus on a balance between extrinsic (cashbacks) and intrinsic (habit-forming challenges) motivators.
- Fraudsters often exploit gamification features, necessitating better fraud detection systems to prevent abuse.
- Platforms should explore alternative engagement strategies, such as community leaderboards, achievement badges, and premium service offerings.
- Gamification should align with financial sustainability, ensuring long-term profitability while maintaining user engagement.

By integrating well-designed gamification strategies, digital payment platforms can continue driving UPI adoption and sustaining India's transition to a cashless economy.

## **5. Conclusion**

The impact of gamification is deep in Indian e-commerce when it comes to the adoption of UPI and sustained digital payment behavior, and this can be seen in case studies of Google Pay and PhonePe. This has successfully converted digital transactions, which were purely a functional need, into something engaging by means of rewards, challenges, leaderboards, and milestone achievements. These strategies have helped the most in making UPI the popular digital payment method among millions of users across India. Case studies reflect that scratch card-based rewards, festive campaigns, and referral bonuses of Google Pay have proven effective in getting the user base engaged. Risks, however, come from fraudulent transactions and sustainability issues for cashback-driven engagement models to long-term retention. As is the case of PhonePe, structured milestone challenges and incentives to merchants and the Switch & Rewards model drive strong engagement but monetary incentives may risk raising the likelihood of sustaining interest in users' pockets without

cashbacks. Despite these issues, research findings have highlighted that gamification plays a very crucial role in building the digital payment behavior. But for sustainability to be achieved, the payment platforms need to find equilibrium between extrinsic reward and intrinsic motivation. Future strategies should more focus on value-driven engagement, like personalized financial insights, seamless user experience, and trust-building measures, rather than cash-based incentives. This research will help the e-commerce business, the fintech company, and policymakers in constructing more effective gamification techniques. A consumer-centric approach that integrates behavioral psychology with secure and innovative engagement strategies is required in promoting the next wave of digital financial inclusion. Through the evolution of a gamified payment ecosystem, the impact on India's digital economy is expected to be greater in terms of the adoption of financial literacy and deepening long-term digital payment.

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